

**Statement of Basis  
Rex Lumber, LLC  
Troy, Pike County, Alabama  
Facility/Permit No. 210-S006**

This draft Title V Major Source Operating Permit (MSOP) is issued under the provisions of ADEM Admin. Code chap. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit. This is the first issuance of the facility's Title V MSOP.

Rex Lumber (RL) produces southern pine dimensional lumber. The significant sources of air pollutants at this facility are a debarker, sawmill, sawdust storage system with three storage silos and cyclones, two 120 MMBF/yr continuous dry kilns with two 40 MMBtu/hr burners, a planer mill and shavings bin with cyclofilter, and a 220 BHP emergency fire pump engine. Other insignificant sources of emissions are log bucking, green woodchippers, bark conveyors, diesel fuel storage tanks and ash hauling and disposal. A third dry kiln included in the original construction project has not been installed.

Incoming logs are stored on-site prior to processing. Logs are debarked and then cut to length. Scrap wood generated in the sawmill is sent to a chipper/screen and then to a chip storage bin. The cut logs are conveyed to three different decks where they are scanned and processed by chipping heads and band saws. The side boards are then edged to proper size, and the center portion of the log cut into boards. The sawdust generated by the sawmill is transferred to one of three silos with cyclones via a pneumatic line. The transfer system is equipped with a switch which allows the sawdust to be sent to only one silo at any given time. Next, the lumber is sent to the Trimmer/Sorter/Stacker line where the boards are cut to length, sorted, and stacked.

After being sorted and stacked, the lumber is dried in the continuous dry kilns. As the green lumber enters the continuous kilns, it is slowly heated until it reaches the center of the kilns, where most of the drying takes place. The kilns are direct-fired by wood-fired burners. All air emissions exhaust through the open doorways at each end of the kilns and through powered vent exhaust stacks located just inside and above the doorway openings.

After being dried, the lumber is transported to the planer mill. Packs of lumber are set on an infeed chain going to a tilt hoist at the planer mill. The tilt hoist unstacks the lumber onto a chain that feeds the planer mill. The lumber is cut to finished size in the planer. The lumber then travels to the planer mill's Trimmer/Sorter/Stacking line to be graded, trimmed, sorted, and stacked. Shavings and trimmings from the planer mill are pneumatically conveyed to a cyclofilter and storage bin.

Finally, the lumber is forklifted to a warehouse to be shipped out. Waste products such as bark, green chips and sawdust, and dried chips are either shipped off site or used as fuel for the dry kilns. The facility also utilizes a 220 BHP diesel-fired fire pump engine to provide water in case of an emergency.

## **Title V**

This facility is considered a major source under Title V regulations as the potential emissions of volatile organic compounds (794 TPY of VOC) exceed the 100 ton per year (TPY) major source threshold. It is also a major source of hazardous air pollutants (HAPs) as the potential emissions of two individual HAPs are greater than 10 TPY (32.4 TPY of Methanol and 11.7 TPY of Formaldehyde) and the potential emissions for combined HAP exceed 25 TPY (56.3 TPY of total HAP).

## **PSD**

The facility is located in Pike County, which is currently classified as an attainment area for all criteria pollutants. Rex Lumber is not one of the 28 Major Source categories listed in ADEM Admin. Code r. 335-3-14-.04(2)(a)(1); therefore, the major source threshold of concern is 250 TPY for criteria pollutants. This facility is considered a major stationary source under PSD regulations because the potential emissions of VOC (794 TPY) from the facility exceed 250 TPY, and the potential emissions of PM (49.3 TPY), PM<sub>10</sub> (26 TPY), PM<sub>2.5</sub> (22.5 TPY), NO<sub>x</sub> (50.1 TPY) and CO<sub>2e</sub> (123,070 TPY) exceed the applicable significance levels.

Air Permit Nos X001 –X004 were issued to Rex Lumber on May 30, 2018, for the initial construction of the facility. Air Permits X001 and X003 were reissued on June 5, 2019, due to infeasibility issues with the proposed control devices for the sawdust systems and stack heights of the kilns. The project triggered PSD review for VOC, NO<sub>x</sub>, PM, and CO<sub>2e</sub>. The following table outlines the Best Available Control Technology emission limits for each applicable unit that were established under the PSD review.

<b>Emission Unit/ Pollutant</b>	<b>BACT Determination</b>	<b>BACT Emission Limit (Each Unit)</b>	<b>Equivalent Emissions</b>
<b>Continuous Kilns</b>			
PM	Proper Design/Operation	0.14 lb/MBF	1.92 lb/hr
PM <sub>10</sub>	Proper Design/Operation	0.103 lb/MBF	1.41 lb/hr
PM <sub>2.5</sub>	Proper Design/Operation	0.099 lb/MBF	1.36 lb/hr
NO <sub>x</sub>	Low NO <sub>x</sub> Burner	0.276 lb/MBF	3.78 lb/hr
VOC (WPP1)	Proper Design/Operation	4.41 lb/MBF	60.46 lb/hr
CO <sub>2e</sub>	Proper Design/Operation	234 lb/MMBtu	9,360 lb/hr
<b>Sawdust Storage Silos</b>			
PM	Cyclone	0.438 lb/hr	6x10 <sup>-4</sup> gr/dscf
PM <sub>10</sub>	Cyclone	0.436 lb/hr	6x10 <sup>-4</sup> gr/dscf
PM <sub>2.5</sub>	Cyclone	0.436 lb/hr	6x10 <sup>-4</sup> gr/dscf
Opacity	Cyclone	10% Opacity	N/A
<b>Planer Mill</b>			
PM	Cyclofilter	0.248 lb/hr	4x10 <sup>-4</sup> gr/dscf
PM <sub>10</sub>	Cyclofilter	0.246 lb/hr	4x10 <sup>-4</sup> gr/dscf
PM <sub>2.5</sub>	Cyclofilter	0.246 lb/hr	4x10 <sup>-4</sup> gr/dscf
Opacity	Cyclofilter	10% Opacity	N/A
<b>Debarker/Sawmill/Planer</b>			
PM	Building Containment	N/A	N/A

RL is also required to monitor and maintain the moisture content of the lumber being dried at  $\geq$  12%, based on a 12-month rolling average, and document its compliance with the facility's preventative maintenance plan for the dry kilns.

The facility has requested that the equivalent emissions for the Sawdust Storage Silos be updated to reflect the correct airflows for those units. The correct equivalent emissions would be 0.0075 gr/dscf for PM, and 0.0074 gr/dscf for PM<sub>10</sub> and PM<sub>2.5</sub>. The BACT limits for these units would not be affected.

### **MACT**

The National Emission Standards for Hazardous Air Pollutants requires that any facility regulated under section 112 of the Clean Air Act whose potential emission of hazardous air pollutants (HAPs) exceeds the major source threshold, unless the source is a specifically designated area source, must control these emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions under 40 CFR Part 63. Rex Lumber is a major source for HAPs and an affected source under 40 CFR Part 63, Subpart DDDD, NESHAP: *Plywood and Composite Wood Products* (PWCP MACT), and 40 CFR Part 63, Subpart ZZZZ, NESHAP: *Stationary Reciprocating Internal Combustion Engines* (RICE MACT).

#### **Dry Kilns**

The PCWP MACT regulates HAP emissions from activities associated with the manufacture of plywood and other composite wood products, including stand-alone lumber kilns, in accordance with 40 CFR §63.2232. Processes that are not subject to the compliance options or work practice requirements specified in 40 CFR §63.2240, such as the lumber kilns, are specifically not required to comply with the compliance options, work practice requirements, performance testing, monitoring, startup/shutdown/maintenance (SSM) plans, and recordkeeping or reporting requirements of the subpart, or any other requirements in 40 CFR 63 Subpart A, except the initial notification requirements in 40 CFR §63.9(b) in accordance with 40 CFR §63.2252. The PSD application for the construction of the kilns served as the initial notification of the affected sources under the PCWP MACT.

#### **Fire Pump Engine**

The fire pump engine is an affected source under the RICE MACT. It is classified as a new source because the installation date was after June 12, 2006. According to 40 CFR §63.6590(c), a new or reconstructed stationary CI RICE located at a major source must meet the requirements of the RICE MACT by meeting the requirements of 40 CFR Part 60, Subpart III: *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. No further requirements apply to this engine under Subpart ZZZZ.

#### **New Source Performance Standards (NSPS)**

As stated above, the fire pump engine is subject to 40 CFR Part 60, Subpart III. Subpart III applies to owners/operators of stationary CI RICE that commence construction after July 11, 2005, and are manufactured after April 1, 2006 [40 CFR §60.4200(a)(2)(i)]. Since the ADEM Form 107 for the fire pump engine indicates it was manufactured in 2018, it would be subject to

this NSPS. According to 40 CFR §60.4205(b), owners and operators of emergency engines with a displacement of less than 30 liters per cylinder must comply with the emission standards for new non-road CI engines in 40 CFR §60.4202 for all pollutants. 40 CFR §60.4207(b) requires RL to use fuel that has a sulfur content ( $\leq 15$  ppm) and a Cetane index ( $\geq 40$ ) or aromatic content ( $\leq 35\%$  by volume), on a per gallon basis. The fire pump engine is equipped with a non-resettable hour meter as required by 40 CFR §60.4209(a). The NSPS also limits the operation of the fire pump engine to emergency situations and 100 hours per year for maintenance checks, readiness testing, and demand response as specified in 40 CFR §60.4211(f).

### **Emission Limitations**

In accordance with 40 CFR §60.4202 to this subpart, the fire pump engine must be certified by the manufacturer to meet the emission standards for new non-road CI engines found in 40 CFR §89.112. The fire pump engine must meet a NO<sub>x</sub> + NMHC emission standard of 4.0 g/kW-hr, a CO emission standard of 3.5 g/kW-hr, and a PM emission standard of 0.20 g/kW-hr. In addition, this fire pump engine must meet the smoke emission standards for new non-road CI engines found in 40 CFR §89.113. Exhaust opacity from the fire pump engine must not exceed 20% during the acceleration mode, 15% during the lugging mode, and 50% during the peaks in either the acceleration or lugging modes. To maintain their certification, RL must operate and maintain the fire pump engine in a manner that meets these emission standards over the entire life of the engine, as required by 40 CFR §60.4203.

### **Compliance Requirements**

To demonstrate compliance with the emission limitations, RLRL purchased an engine certified to meet the emission standards. RL maintains records of the date, time, duration, and purpose of operation each time the emergency fire pump engine is operated, as required by 40 CFR §60.4214(b). To demonstrate compliance with the fuel limitations as required by 40 CFR §60.4207(b), RL maintains records of the sulfur content and either the Cetane index or aromatic content of the diesel fuel that is burned in the emergency fire pump engine. All records are maintained in a form suitable for inspection and retained for a period of two years from the date of generation, as required by 40 CFR §60.7(f).

### **Testing Requirements**

There are no testing requirements for the emergency fire pump engine since it is certified by the manufacturer, as required by 40 CFR §60.4211(c).

## **State Regulations**

### **Particulate Standard**

#### ***Fuel Burning Equipment***

The CDKs are not subject to ADEM Admin. Code r. 335-3-4-.03(1), because the kilns are direct fired, and therefore, not considered “fuel burning equipment”. The fire pump engine is not subject to this regulation because its function is to supply water in the event of a fire.

### ***Process Industries – General***

All units and processes, except for the fire pump engine, are subject to the State particulate matter emission standards for process industries as provided in ADEM Admin. Code r. 334-3-4-.04(1).

### ***Visible Emissions***

All units and processes are subject to the State visible emission standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once during any 60-minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average).

### **Sulfur Dioxide**

The fire pump engine is subject to the State sulfur dioxide emission standard of 4.0 lb/MMBtu of heat input [ADEM Admin. Code r. 335-3-5-.01(1)(b)]. However, the potential emissions determined by AP-42 emission factors are used for applicability purposes under the Title V and PSD regulations. The CDK's are not subject to the State sulfur dioxide emission standards as the units are direct-fired.

## **Emission Testing and Monitoring**

### **Testing**

I recommend that no emission testing be required for the kilns as it is expected that the kilns comply with the BACT limits, testing for continuous kilns is not easily conducted, and there are no emission control devices. I also recommend that no emission testing be required for the planer mill cyclofilters and sawdust storage system cyclones because calculations indicate that they are capable of complying with the BACT limits. If emission problems are observed in the future from these emission sources, testing may be required at that time.

### **CAM**

Since cyclones on wood waste pneumatic systems are considered process equipment, CAM would not be required for the sawdust storage system or planer mill.

### **Periodic Monitoring**

To ensure that the maximum capacity of the kilns are not exceeded, RL is required to calculate the kiln production on a monthly and 12-month rolling total basis, to be updated within ten (10) days of the end of each calendar month.

To ensure proper operation of the sawmill and planer mill, visual observations are required on a daily basis, with corrective actions to be initiated as soon as practicable but not longer than 24 hours if visible emissions are noted. Annual physical inspections of the control devices are also required.

## **Recordkeeping and Reporting**

### **Recordkeeping**

RL is required to maintain records of its actions taken to comply with proper maintenance and operating practices. Records of daily visual observations of the cyclofilter and cyclones are also required, as well as records of average monthly and 12-month rolling lumber moisture content and production. These records are maintained on-site in a permanent form readily available for inspection.

### **Reporting**

RL is required to submit Semiannual Monitoring Reports for the processes, which include a certification that all emission monitoring and proper maintenance and operating practices were accomplished as required during the reporting period, and if not, describe the date and reason any required action was not accomplished.

### **Public Notice**

The issuance of this Title V MSOP would require a 30-day public comment period and a 45-day EPA review period.

### **Recommendation**

I recommend that Rex Lumber Company's Title V MSOP be issued with the requirements noted above pending the resolution of any comments received during the 30-day public comment period and the EPA 45-day review.



Lester Meredith  
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July 8, 2020

Date

VLM/vlm